COORDINATING DRAFT

ANNEX B, APPENDIX 2
CHEMICAL STOCKPILE EMERGENY PREPAREDNESS PROGRAM
MONITORING, SAMPLING, AND DECONTAMINATION

I INTRODUCTION

A. Purpose

To establish authoritative monitoring, sampling and decontamination policies in the event of a chemical emergency in the state of Washington. The policies include coordinating response and recovery actions with state agencies and local governments. Local jurisdictions, Benton and Walla Walla Counties, and Washington State agencies implement this Plan in the event of a chemical emergency at the Umatilla Chemical Depot (UMCD), located in Umatilla, Oregon.

B. Scope

This Monitoring, Sampling, and Decontamination Appendix, to the Chemical Recovery Annex of the Washington State Recovery Plan, describes the function and procedures agreed to by state, local jurisdictions, and emergency response organizations in providing chemical hazard detection monitoring and an integrated sampling plan to support recovery efforts.

II. Concept of Operations

A. General

1. Procedures for responding to a chemical emergency are described in the Washington State Integrated Fixed Facility Radiological and Chemical Protection Plan and the Benton County Protective Action Strategy Plan. In addition, first responder organizations have supplementing plans and Standard Operating Procedures (SOPs) that cover the details for activation, movement, and staffing of Access Control Points (ACPs), as well as emergency staffing of ambulatory services and hospitals in the impacted area. By current policy, the Army, as the On-Scene Coordinator (OSC), will be responsible for sampling soil, air, and water to check for contamination by chemical agents.

2. State and/or local jurisdiction personnel may accompany Army sampling and monitoring teams as long as they are properly trained, qualified, and equipped in accordance with the regulations governing hazardous waste operations and emergency response. State and/or local jurisdiction personnel observing or accompanying the Army sampling teams must be fully trained and certified in chemical agent awareness and Army chemical agent sampling procedures.

B. Requirements for Monitoring Personnel

1. Monitoring personnel must be fully trained and certified Hazardous Material (HAZMAT) technicians. They will usually be members of local fire departments, law enforcement organizations, or special teams trained by the Hanford site or the Umatilla Chemical Depot (UMCD).

2. Response activities, staffing of traffic and access control points, staffing of community decontamination stations and recovery activities in the exclusion zone will be limited to the availability of monitoring and protective equipment. Monitoring and sampling personnel will be required to conduct their activities in areas where the atmosphere is unknown, and due to the nature of the mission it is assumed that it will be potentially Immediately Dangerous to Life or Health (IDLH). In this environment they will be required to wear Level A protection and to use atmosphere-supplying respirators that provide a self-contained breathing apparatus. IDLH levels of chemical agents are:

   a. GB - 0.2 mg/m3

   b. VX - 0.02 mg/m3

   c. HD - 1.67 mg/m3

   For detailed description of these chemical agents, see the fact sheets at the end of this Appendix.

C. Decontamination Decisions/Goals

Local authorities may need assistance deciding whether decontamination is necessary and then if decontamination has been effective. Positive determination of contamination will be difficult because visible contamination is very unlikely since all potential accidents will result in airborne dispersion of agents such as vapors and/or aerosols. There are two types of decontamination methods: passive, using weathering or aging to degrade the agents by exposure to the elements, or active, using solutions or absorbents to physically

remove and/or neutralize contamination. Decision-makers will need to determine that something is decontaminated or:

1. Make a decision to reinitiate active decontamination measures when initial efforts have been shown by monitoring or sampling to be ineffective.
2. Make a decision to confirm effectiveness of passive decontamination measures by use of monitoring and/or sampling techniques and where active decontamination is impractical.

D. Exclusion Zones

The potential contamination area is the area within the designated protective wedge and the IRZ. The area outside the protective wedge is considered uncontaminated.

1. ACPs and decontamination sites are to be placed outside the designated protective wedge, in clean or uncontaminated areas.

2. Responders are not to go into potentially or known contaminated areas without proper evaluation, selection and use of Personal Protective Equipment (PPE).

E. Decontamination Strategies

1. Establish control measures defining “hot zones.”

2. Establish rapid decontamination procedures and prompt treatment for people exposed or potentially exposed to Chemical Weapons Agents (CWA), in lieu of monitoring or sampling.

3. Systematically assess the effectiveness of decontamination.

4. Consider multiple monitoring approaches such as reconnaissance teams, a survey system for data collection, and observance of biological monitors.

F. Monitoring Work Rules

Monitoring provides data for exposure assessments for emergency response personnel entering contaminated or potentially contaminated areas and for personnel conducting decontamination. Exposure assessments must be conducted on a periodic basis to determine if the exposure levels of CWA exceed or do not exceed the IDLH or the airborne exposure limit to allow decision-makers to determine the level of PPE to be used.

1. For emergency responders, monitoring equipment must be available to provide visual or auditory warning that agent exposure level is about to reach the protection factor of the respirator, or the capabilities of protective clothing has not been exceeded.

2. For emergency responders entering an area of unknown or IDLH concentrations of CWA, Level A protection is required. Downgrading from this level can be based on objective monitoring data demonstrating it is safe to do so.

G. Sampling Guidelines

1. Baseline Studies

   a. The depot, counties and states will request through the CSEPP Office of the Chemical and Biological Defense Command that a baseline study for the UMCD, the IRZ and the PAZ be conducted. The baseline study will enable a creditable and accurate determination of post-incident agent residues.

   b. The baseline study will include collecting soil, air, water, and vegetation samples. The UMCD, county, state, and the sampling agency will jointly develop the sampling plan.

   c. The sampling sites will be selected according to probable deposition areas that will be identified based on air modeling.

   d. There may be an agricultural impact assessment conducted by the program manager for chemical demilitarization facility (incinerator) on the agricultural products grown in the vicinity of the UMCD. If the impact is evaluated, both the baseline and the agricultural assessment sampling plans should be combined to eliminate duplication and conserve resources.

   e. The sampling guidelines contents include:

      (1) Health and safety procedures.

      (2) Instrumentation.

      (3) Sample taking.
      (4) Field quality assurance/quality control.

(5) Sample handling, custody, packaging, and shipping.

(6) Laboratories and analytical references.

(7) Site safety plan.

(8) The US Department of Transportation Placquering and Labeling System provides guidance for Hazardous Material Shipping and Markings.

(9) Generic sampling quality assurance/quality control plan.

2. Mapping and Sampling Sites

a. The description and location of each baseline sampling point must be precise. A geographical coordinate grid system for the IRZ and PAZ areas around the UMCD will be used in locating, sampling, monitoring, and decontamination activities. A map system of large enough scale to be able to identify sampling points by latitude and longitude, section, range, and township will also be used.

b. If a chemical event occurs, sampling will be primarily focused on identifying the plume boundary and concentrations of agent. The areas which are sampled and determined to be contaminated are termed “hot spots” and are marked as exclusion zones and identified by section, or fractions thereof, range, and township. This area identification will support management of the recovery and allow displaced landowners to better identify affected and unaffected areas.

3. Requesting Sampling Teams and Laboratory Capacity.

The UMCD and the counties will develop a system for requesting additional sampling and laboratory capacities during the response phase of a chemical event. This can be accomplished anytime by dispersion modeling and then determining how many sampling teams and how much laboratory capacity would be required to produce quality results within a specified time. An actual event could be matched against a comparable model and a request for assistance could be expedited. Collection, shipping, analysis, and evaluation of environmental samples can easily require days or weeks. Since displaced citizens will apply pressure to return to

their homes, livestock or farms, every effort must be made to expedite the assessment of the off-post contamination.

4. Sampling Guidelines

   a. Environmental sampling must be conducted in accordance with all applicable federal, state, and county regulatory standards. Sampling guidelines to be used are outlined in the Quality Assurance Project Plan, January 1990, Emergency Response Branch, U.S. Environmental Protection Agency, Region VIII. These guidelines are generic and therefore the experts at the Washington State Department of Labor and Industries will determine which guidelines are applicable to our situation.

   b. The primary reasons for environmental sampling are to determine where any agent has been deposited, so that it may be removed, destroyed, or quarantined, and to determine when and whether people may safely return to their homes and workplaces after an evacuation. In areas where no contamination is found, restrictions will be lifted and arrangements made for evacuee return.

H. Sampling and Decontamination Priorities

1. Sampling is a precursor to decontamination. After the sampling teams determine the deposition boundary and the hot spots, the Recovery Resource Group (RRG) will determine the priorities for sampling. Once priorities are established, effective planning can begin for the allocation of sampling teams and analytical resources. The following is a list of categories that need to be prioritized:

   a. Human remains.

   b. Livestock and companion animals that are known or suspected to be contaminated and are deemed likely to recover as a result of prompt decontamination and veterinary treatment, and are sufficiently valuable to justify the expenditure or resources required for decontamination.

   c. Drinking water.

   d. Personal property, the absence of which creates hardship for the owner, e.g., automobiles used by evacuees.

   e. Real estate and terrain.

f. Incidental property.

g. Food.

h. Livestock fodder and feed, and crops.

2. Principles of Decontamination

a. Decontaminate as soon as possible. This minimizes the effect on personnel and allows for normal operation of equipment/facilities as soon as possible.

b. Decontaminate only what is necessary. Decontamination requires a significant amount of time and decontamination material. Decontamination also results in the production of large amounts of hazardous waste, which must then be disposed of properly. It is essential that limited decontamination assets be focused on high priority operations.

c. Perform decontamination within or as close as possible to the contaminated area to limit spread of contamination.

d. Weathering as a decontamination procedure for vegetation and other non-critical items with large surface areas (structure, roadways, etc.) has much merit in that it is simple and requires no special equipment or implement. However, it is never precise nor fast, and would require enforced quarantine restraints to prevent the spread of agent contamination.

e. The issue of how “clean” agent contaminated material must be before it can be released to the public is under consideration. Until final standards are established, the interim chronic toxicological criteria endorsed by the Department of the Army Office of the Surgeon General should be applied.

f. Decontamination of private property should only be accomplished after the owner grants permission in writing.

3. Marking of Contaminated Areas

Marking equipment will consist of barrier tape and chemical hazard signs that will be used to identify contaminated areas, equipment, materials, and facilities.

4. Decontamination of Food

All food located in an agent-contaminated area should be considered potentially contaminated. For ease in managing the potential ingestion hazard posed by food, all suspect items can be categorized into the following groups:

a. Group I – packaged (e.g., glass, metal, plastic, etc.), sealed, unopened items that have been exposed only to agent vapor. These items could undergo surface decontamination and eventually be used.

b. Group II – unpackaged items (e.g., fresh fruit), opened packaged items or items packaged in untreated paper or cardboard. These types of items should be destroyed and not used as human food.

c. Annex E, Agriculture and Food Control Measures, further details procedures and responsibilities for decontamination.

5. Decontamination of Livestock and Companion Animals

Local jurisdictions in conjunction with Washington State Departments of Health and Agriculture need to establish a program to appropriately prepare owners of livestock and companion animals and others who need or wish to learn to decontaminate animals. The program should encompass:

a. Identification of individuals who can be members of rapidly mobilized caretaker teams.

b. Equipment and procedures to avoid self-contamination while getting to and treating animals.

c. Triage decision protocols to decide where to focus decontamination efforts.

d. Procedures for surface decontamination of livestock and companion animals as quickly as possible after exposure, including removing the animals from the source of contamination, washing with bleach solution or other

alkaline materials, and thorough rinsing with uncontaminated water.

e. Procedures to be followed in decontaminating livestock and companion animals which have ingested agent material.

f. Procedures to ensure the proper disposal of all used decontamination solutions and rinse water runoff.

g. Procedures to feed, water and otherwise tend to livestock and companion animals

6. Decontamination of Human Remains

There is a low probability that human remains may become contaminated. However, it is prudent to have a system and procedures for dealing with that possibility. A plan for the decontamination of human remains must address the following issues:

a. Retrieval of remains and personal effects (all remains and personal effects found in the contaminated area will be assumed to be contaminated).

b. Decontamination of remains by washing (for limited contamination) or soaking (for gross contamination) for at least 15 minutes in a 5% solution of calcium hypochlorite, household bleach, HTH, or super-tropical bleach, followed by thorough rinsing with clear uncontaminated water.

c. Monitoring of the decontaminated remains and certification that they have no detectable agent greater than the allowable atmospheric exposure limit (eight-hour, time-weighted-average) for workers. Decontamination should be repeated if residual contamination exceeds the allowable limit.

d. Preparation of the remains for transfer by placing them in an approved human remains pouch containing one gallon of 5% hypochlorite solution (e.g. household bleach). Remains should be refrigerated if transfer will be delayed.

e. Provision of approved chemical protective clothing, equipment, and procedures for retrieval and decontamination personnel.

f. Availability of crisis intervention teams to provide religious and psychological counseling for any personnel handling

human remains. Consideration should also be given to making these teams available to families of the deceased and others affected by the incident.

g. The human remains decontamination plan should include provision and assign personnel and resources to ensure that the removal and decontamination of remains is consistent with the applicable state and local laws, regulations, policies, and procedures. (e.g., those regarding pronouncement of death, signing of death certificates, identification of remains, and forensic investigations of the remains or of the site of death).

h. Ethnic, racial and religious concerns need to be considered.

III. Responsibilities

A. The Commander of UMCD is responsible for chemical agent monitoring, release detection, incident analysis, and emergency response within the UMCD post boundaries. The U.S. Army Chemical Accident/Incident Response and Assistance (CAIRA) Operations Pamphlet (DA Pam a50-6) provides for coordinated federal response to a chemical agent accident or incident and details actions accomplished by UMCD and higher echelons during a chemical agent event.

B. Policy Paper Number 2, promulgated in October 1993, established the CSEPP policy on environmental monitoring and sampling in the event that lethal chemical agents are released in the environment. That policy states that the Army, as the On-Scene Coordinator (OSC), will be responsible for sampling soil, air, and water to check for contamination by chemical agents. In the event of a release involving the stockpile of unitary chemical weapons, the Army's Initial Response Force Commander (IRFC) or Service Response Force Commander (SFRC) also serves as the OSC under the National Contingency Plan.

C. In performance of the state's primary mission of protecting people, property, and the environment, Washington State supports county emergency response organizations in their mission of response, reentry and recovery. State agencies will assist local jurisdictions, as requested, in such areas as command and control, warning, communications, public information, accident assessment, public health and sanitation, social services, fire, search and rescue, traffic control, emergency medical services, law enforcement, medical transportation, mass

transportation, protective response, contaminated food control, and food and lodging assistance.